1 that Verizon would provide -- let me call it central 2 office A, to get this straight.

The point of interconnection MR. GOYAL: is at co-location at central office A?

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MR. ALBERT: Correct. The CLEC would co-locate at central office A, they would have their physical DS3 facilities connected to Verizon's at central office A. They would order the DS3 between central office A and intermediate 10∥hub--

The DS3 ordered between MR. GOYAL: central office A and intermediate hub, when you say "ordered," you mean that is -- those are dedicated facilities the CLEC is paying for?

MR. ALBERT: A dedicated DS3.

MR. GOYAL: That the CLEC is paying for at--as UNE dedicated transport?

MR. ALBERT: Let's set aside the how and who pays because that's another set of arguments we could get into that.

MR. GOYAL: It's not a related set of 22 arguments.

MR. ALBERT: It is related but to 2 understand the multiplexing.

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MR. GOYAL: Let's focus on the physical provisioning.

It's true, the GRIP, the MR. ALBERT: VGRIP, the IPs and the whims and the whams, that overlays on a number of different issues, okay? 8 All of that is important because it just--it's a 9 decision point over who pays for the transport. 10 | But a lot of these issues, you could look at them 11 first independent of who pays.

You got to eventually link them up a 13 little bit and make decisions together.

MR. GOYAL: I don't want to take up too 15∥much of Mr. Keffer's time, so why don't you explain 16 the physical provisioning.

MR. ALBERT: The CLEC will order from 18 their co-lo to the intermediate hub, at which point 19 this would be from the central office A through the 20∥intermediate hub. This would be physical Verizon 21 | facilities.

> And DS3 level? MR. GOYAL:

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MR. ALBERT: Interoffice, it would be up to OC48, but that DS3 portion of that OC48 would be dedicated to the CLEC.

MR. GOYAL: In the intermediate hub this would be deMUXed into the DS1s?

MR. ALBERT: Correct.

MR. GOYAL: Sorry, Mr. Keffer.

MR. KEFFER: No, that was helpful.

MR. ALBERT: I didn't get to my point.

MR. KEFFER: Go ahead and get your pony,
Al, but I was going to suggest that Mr. Talbott be
permitted to respond to this, and we will deal with
this one issue at once, and the staff could ask
their questions. I think that would be the most
efficient way to deal with this, given we are
pretty deep into this one issue right now.

MR. ALBERT: Okay. Terminus hub, the other type we talked about, is a location in the NECA 4 tariff. Verizon does multiplexing there for carriers. We had an electronic digital cross-connect machine, a three-by-one digital cross-connect machine located there which we used

to do in three-to-one multiplexing. However, in a terminus hubs, the DS1s that are then demultiplexed 2 I down, DS1 trunks can be terminated to a switching 3 machine in that building, which is the distinction 5 between a terminus hub versus the intermediate. And a terminus hub there is not sufficient buildup interoffice facility capacity to then take the DS1s that were demultiplexed further out into Verizon's network.

So, the actual trunk ordering to terminus hub, if multiplexing is ordered at terminus hub, those switched trunks that are ordered have to terminate to the switching machines that are located in that central office building.

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Now, offices that are intermediate hubs and terminus hubs are such because we do have the electronic digital cross-connect machines that allow us to do three-to-one multiplexing or IXCs for CLECs. Intermediate hubs are intermediate hubs because we got enough IOF facilities in place to take orders from CLECs for DS1s that would run through the intermediate hub through the subtending offices.

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I think what AT&T and WorldCom are saying 3 is they would like to be able to do multiplexing 4 anywhere in any of our central offices. Obviously, we don't offer that in the tariffs, the way it is today.

What we could do, and the reason for that is we don't have a three-to-one cross-connect machines.

Now, multiplexing with the big M, which I said we do do, which is different than the much 12 | narrower trunking DS3, multiplexing we do in big 13∥buildings and all carriers do that. But if ordered 14∥to do a DS3 to DS1 multiplexing for an IXC or for a 15 CLEC for switched trunks in an office where we 16 didn't have a digital cross-connect machine, the 17 physical piece of equipment that we would have to 18∥put in place would be an asynchronous--I will write 19 ASYNC, three/one multiplexor. And these are older 20 pieces of transmission equipment that came out in the very first stages was fiber optics prior to 22 SONET, which is synchronous. We do have in these

offices some quantity of these 3/1 asynchronous multiplexors.

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However, we have stopped calling these brand new for a while, and when we go into offices and put in new electronic digital cross-connect machines, we retire these pieces of equipment. But this is the piece of equipment that physically to do dedicated to a carrier where we break their whole DS3 into 28 DS1s that they specify, that would be the type of equipment that we would have to deploy in the end office to do multiplexing for a CLEC for switched trunks if they wanted to do it in an office where it's not offered today for the tariff designations.

Here is where we get to the pony. Now, if WorldCom or AT&T would want to put into the contract that in these offices, in order to do terminus-type multiplexing to bust down in those offices the DS3s and DS1s, we could do that. But what it would require is you would have to go and find a dead spare async three-to-one multiplexor somewhere, we would have to de-install it from its

1 current location. We would have to reinstall it in 2 an office where you would want us to do the three-to-one multiplexing, and that's the physical way we would have to provide it.

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Sort of "Sanford and Son" MR. KEFFER: multiplexor?

It really is. MR. ALBERT: It would take a lot longer and be very expensive and would be very inefficient.

MR. KEFFER: You make it sound so 12 attractive.

MR. ALBERT: That's why you thought this issue would go away because the option to do it anywhere you want is to do this expensive 16 time-consuming thing, and doesn't make sense, but maybe we weren't all quite understanding each other 18 relative to big M multiplexing as opposed to the 19 precise contractual multiplexing for switched 20 trunks.

Realistically, to do this, to find a dead spare async multiplexor and de-install and install

1 it, we are talking four months to do that, just 2 normal lead times with our vendors to get things done. So, it's not going to be speedy. going to be cheap.

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I would throw that out -- I would prefer not to put that into the Interconnection Agreement because to me it would seem like we had something in there if you get an option, but it would not seem to me to be a very practical, efficient or usable option.

But other than that, I think we are just arguing over theory that when you translate it to practical reality, the one way to do what I thought you were asking for is going to take a long time with trunks and be very expensive.

MR. KEFFER: Let me see if I could boil that down to the salient points here. You do multiplexings for yourself today in each end office, but you do not deploy the equipment that, in your view, would be required to do multiplexing for CLECs in every single office. You have described a mechanism by which it might be possible

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to do it, some offices using salvaged equipment 2 that you otherwise would be throwing away.

MR. ALBERT: I have been resisting agreeing with you that we do multiplexings for ourselves in the broad sense because --

> MR. KEFFER: I noticed that.

MR. ALBERT: Right, because the type of multiplexing we are talking about here in the contract is a narrow specific precise type of multiplexing that, when you deal with it, is much, much different operationally than when you use the term multiplexing in the big broad context.

MR. GOYAL: If I could address one 14 outstanding point with respect to those 15 | hypotheticals, Mr. D'Amico, are you familiar with, or would you be familiar with the manner in which 17 | Verizon is compensated, if at all, for the transport between central office A and the intermediate hub location where a CLEC chooses to imply DS3 interconnection facilities to central office A?

> MR. D'AMICO: Yes. In that scenario, in

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central office A--that's a co-location cage; right?

MR. GOYAL: Yes, that's the POI.

MR. D'AMICO: So they are going to--I'm assuming they're going to have me go to the intermediate hub, and then there's going to be DS1s that spin off from that to the Verizon end offices.

MR. GOYAL: It was about the compensation to Verizon, if any, for the DS3 transport between central office A and the intermediate hub. Does the CLEC pay for that as dedicated transport?

MR. D'AMICO: Yes. That would be--well, in that diagram, it looks like it would be a cross-connect from the cage to within that CO-A, and from that central office A there would be direct trunk transport to the intermediate office.

MR. GOYAL: Thank you. Did you want
Mr. Talbott to--

MR. KEFFER: As I suggested a few moments ago, I think that given I will let Mr. Albert go on and make his points on this issue, it might be most efficient if it's acceptable to you to let
Mr. Mr. Schell and/or Mr. Talbott respond to what

Mr. Albert said, and then we could dispense with the debate on this issue up front.

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MR. DYGERT: I think that's fine.

MR. SCHELL: John Schell. I will address it for AT&T.

First thing I would like to point out is to take this issue and put it into context with a couple of other Verizon proposals. Verizon has proposed in the point issue, issue I-1, GRIP and VGRIP which would drive the CLECs to interconnect at Verizon end offices.

If not all of them, most of them--and in case that proposal misses any end offices, they propose that when your volume of traffic from a tandem exceeds 24 circuits, DS1 volume of traffic, and here I'm referring to issue I-4 tandem exhaust, that you build a direct trunk group to that end office.

So, on the one hand Verizon is saying we are going to drive you to interconnect at all of our end offices or most of our end offices. And then Verizon says, "However, we are not going to

allow you to choose the most efficient form of 2 | interconnection in those offices. We are going to limit you to the DS1 form of interconnection. not only that, but in another issue on the table, we are going to charge you special access rates, not TELRIC rates, but special access rates for that."

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And the reason, and I'm going up to the chart in a moment to address this in more detail, but in summary the reason they say you cannot connect at each of our end offices is we don't have the right kind of multiplexed equipment there.

Now, I have 35 years in telephony, and I was a transmission engineer for AT&T for many years for the eastern region of AT&T Communications, and I can assure you that multiplex equipment is multiplex equipment.

Now, functionally, they have agreed that in each of their offices, they have the equipment to multiplex signals from SONET to the DS1 level because, as Mr. Albert has testified, you must be at the DS1 level to interface the switch. So, at

every single office, they could get off of their 2 fiber optic system down to DS1.

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That proves the technical feasibility of that arrangement under 198 of the Commission's 5 First Report and Order. They do it, they do it in 6 all their offices. It's technically feasible.

So, the first thing to understand is what 8 Mr. Albert is parsing out is the type of multiplex equipment you use to perform that function. Now, a digital cross-connect system combines the capabilities of two pieces of gear, the M13 multiplexor stand-alone, and a manual cross-connect, where you literally went up to a DS1 cross-connect and you cross-connected two signals. 14 |

What the digital cross-connect system does--and you could buy it in several varieties--is 17 it combines those two functionalities into one piece of equipment and allows you to make the cross-connections in software rather than having to do it physically.

21 Other than that, they are functionally the 22 same.

response to Mr. Goyal's question, is given that they're going to want us ultimately to interconnect in each of these end offices, the way they're saying we would have to do it, though, is not to bring a DS3 circuit from the CLEC point of presence down to central office A at DS3 level and obtain the multiplexing functionality there and put the DS1s into that switch, and yes, maybe extend some of the DS1s from there to central office B or to central office C. They're saying no, you have to take all of those and either obtain another interoffice facility from us to the NECA 4 office--

MR. GOYAL: Just so we are clear about the nature of the exhibit, could you label on the top left-hand corner that the red markings are AT&T exhibit on top of black markings, and I don't know what the next AT&T exhibit number is.

MR. SCHELL: What Verizon would have us do, and again, when you look at the impact of all of their proposals taken together, you could see the mark. Number one, they interconnect at every

end office, but in another proposal they tell you that are you not free to choose to interconnect there. You must interconnect at DS1.

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So, you either buy DS1 circuits when they're not cost-effective, or if you buy a DS3 circuit, and the example Mr. Albert drew, take it from central office A over to the NECA 4 office where they offer that functionality, and then break it out into--up to 28 DS1s and bring those DS1s back to that office or at least some subset of those DS1s back to the office, and then possibly also take some the DS1s from that office to say central office B or other end offices.

So, the end result of all this is again, bottom line, does functionality exist in this office? Yes. They do it today, they do it for themselves. The difference is they want to reserve a certain set of equipment for their own use and not make it available for CLECs' usage.

Mr. Albert talks about going out and finding all of this old M13 equipment and moving it into these offices to provide it to the CLECs.

1 Either you're already using that equipment in those offices or they have the newer digital cross-connect equipment in that office. In either event, they could provide the functionality AT&T is requesting.

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MR. TALBOTT: If I could add, under the example that Mr. Schell used at central office A, if AT&T had exceeded the 200,000-minute threshold at that office and we wanted to establish a direct trunk or were required to and had our POI at central office A, we would have to purchase DS3 special access from central office A to the intermediate hub location and purchase 28 DS1 or a sufficient number of DS1s back to central office A, special accessed rates for the number of trunks that were required at that office.

So, completely inefficient arrangement rather than establishing the facilities to the office where under Verizon's proposal we would be required to trunk to.

MR. GOYAL: If I could ask just a couple of questions of Mr. Talbott in response to that

1 testimony by Mr. Schell and Mr. Talbott, does 2 | Verizon maintain multiplexing and demultiplexing equipment capable of taking traffic down from a DS3 to a DS1 or from other technically feasible or from other technical interfaces to a DS1 at locations other than the intermediate hub locations for its own capital M multiplexing?

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MR. ALBERT: For its own capital M? Yes, but not that can be ordered by a CLEC.

MR. GOYAL: Is the reason it can't be ordered by CLEC due to the interoffice facility constraints you were referencing earlier in your testimony?

MR. ALBERT: That's one, but it's also due 15 to multiplexing unto itself.

What AT&T is blurring in their description is combining the terms "interconnection" with the very specific part of the contract here that's 19 related to trunk ordering, and those are two 20 related but yet two different things. The way 21∥trunks are ordered today by CLECs and by IXCs and by everybody, which matches the way the OBF is set

up. There are only two ways you could order a DS1 interface on the switches or you could order multiplexing of a DS3 on MUXed DS3 down to a DS1.

We are very specifically in this part of the contract dealing with DS3 to DS1 multiplexing. The multiplexing that Mr. Schell described when he talked about stepping down a SONET system all the way to the DS1, that multiplexing with a big M does occur in those offices. That is not, though, what the CLEC orders. That's not what's being dealt with in this portion of the contract.

MR. GOYAL: I suppose to some extent I'm wondering if that doesn't miss the issue, though. Isn't the issue not that interconnection trunks can't currently be ordered at those offices at other than DS1 interfaces, but why they can't be? I understand your testimony that the ordering of trunks in the physical interfaces and multiplexing are two different things, but what I would like you to explain, if possible, is why--why interconnection trunks can't be ordered at the same interfaces at which multiplexing or demultiplexing

is performed in nonhub locations.

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I guess, one, because no CLEC MR. ALBERT: has ever asked for it, and they haven't asked for it in this contract.

And the reason I think here we are more on a theoretical debate on this issue is because if there was a different type of multiplexing other than DS3 or DS1, and if a CLEC or an IXC seriously wanted it, seriously wanted to be able to use it, they would have to go to the ordering and billing forum to raise the issues with the standards bodies and to work through and develop the means for those other types of interfaces and other types of multiplexing and other types of arrangements could be worked out in the standard way for the industry to use.

So, the things they are describing, we haven't worked on it in negotiations. They have never gone to the standards bodies for it, and there are no IXCs or CLECs today that are asking us 21 for it.

There are a lot of things that are

technically imaginable and a lot of things that are technically possible, but if somebody wants it, they got to ask for it, and there are processes to go through and find what it really is, and to figure out and work the standards on how to order it, and figure out the standards on how you're going to maintain it, and all of the work that's involved with developing any new service, and we do that with carriers for different things all the

But for this stepping down all the way from a SONET signal to a DS1 for trunk ordering, we haven't negotiated it, and they haven't asked for it, and nobody in the world is going to do any of the standards bodies for it.

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MR. DYGERT: Mr. Schell, let me interrupt you. I would rather much get back to the more traditional question-and-answer format instead of this competing presentation by our witnesses.

And Mr. Keffer, if you continue with your examination.

MR. KEFFER: I'm going to move now to

issue V-8.

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Now, I'm not sure which of the Verizon witnesses can address this question, but assume 4 hypothetically you got an AT&T customer connected to an AT&T switch, and that AT&T customer is 6 originating an interexchange call that is going to 7 be routed to an interexchange carrier other than 8 AT&T, AT&T directs the call to Verizon's tandem 9 | switch, and Verizon puts it on a trunk to the appropriate interexchange carrier. Are you with me?

MR. D'AMICO: Yes.

MR. KEFFER: That situation is addressed in our proposed Interconnection Agreement Section 6.3.1; is that correct?

MR. D'AMICO: Yes. We refer to those as the access toll connecting trunks.

MR. KEFFER: All right. Let's now have Verizon and AT&T trade places. Now, Verizon is the 20 local exchange carrier, and Verizon's customer 21 wants to make a toll call. And then this hypothetical, the toll call is to the interexchange

1 carrier that wants to use AT&T's switch as the 2 II tandem. So, hypothetically, the call would go from your end office to your AT&T switch functioning as a tandem, put it on a trunk to the interexchange carrier that would complete the call.

That situation is not addressed in the Interconnection Agreement between us, is it?

MR. D'AMICO: Correct.

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In fact, you don't want that MR. KEFFER: situation addressed in the Interconnection 11 Agreement, do you?

MR. D'AMICO: No, because it's addressed in the access tariff.

MR. KEFFER: If that situation came pass, your access revenues would go down, would they not?

MR. D'AMICO: If we were to take it out of the access tariff and the access tariff doesn't apply to something else?

MR. KEFFER: No. If in my hypothetical the Interconnection Agreement contemplated an arrangement where a call was routed, your end office through AT&T switch as a tandem and on to an

1 interexchange carrier, in that circumstance AT&T
2 would get access revenues at the tandem, you would
3 not get access revenues in that circumstance;
4 right?

MR. D'AMICO: Well, that's like saying if we put in the contract that access is free, would our access revenues go down, the answer would be yes.

MR. KEFFER: I'm just trying to understand your objection to the arrangement I described in my second hypothetical.

The objection is that, from your perspective, it's in the access tariff, not in the Interconnection Agreement.

MR. D'AMICO: Right. And basically what's happening is that AT&T is providing a service to interexchange carriers, and that again is addressed in the access tariff, FCC number one. So, A, it's already covered, and B, it's not appropriate that it should be in an Interconnection Agreement. That's our basic position on that.

MR. KEFFER: Okay. Those are all my

1 questions. MR. STANLEY: Okay. So, I guess Verizon is up next. 4 MR. EDWARDS: We have no questions for this panel. 6 MR. STANLEY: Could we take a couple-minute break. 8 (Brief recess.) 9 MR. DYGERT: We are back on the record. Gentleman, first, good afternoon, and second could 11 you please identify yourselves for the record. 12 MR. GREEN: I'm William Green. 13 wholesale E911 national product manager for 14 | Verizon. 15 MR. SIGUA: Willie Sigua of WorldCom, 16 S-I-G-U-A. 17 Whereupon, 18 WILLIE SIGUA 19 WILLIAM GREEN 20 were called for examination by the Commission and, 21 after having been duly sworn by the notary public, 22 were examined and testified as follows:

QUESTIONS FROM STAFF

MR. KEHOE: I'm William Kehoe for the FCC, and I'm going to ask a few questions about issues

IV-7 and IV-9 that deal with 911 and E-911.

I would like to begin with the Verizon witness.

Am I correct --

MR. STANLEY: First of all, for the record, both parties have agreed to waive cross, Verizon and WorldCom agreed to waive cross?

MR. OATES: Yes, that's correct.

MR. MONROE: Yes, correct.

MR. KEHOE: Am I correct that the main substantive issue between the party concerns the alternative routing codes to get 911 traffic to public service answering points?

MR. GREEN: Yes, that is the primary

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MR. SIGUA: I would say one of the

20 primary.

MR. KEHOE: Which other issues are there,

22 very briefly?

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MR. SIGUA: If routing is the crux of 2 giving what we need for the public safety, I was 3 going to Verizon for connection to their tops operator service at the platform.

MR. KEHOE: Thank you. Does WorldCom 6 presently have the alternative routing codes for 7 the State of Virginia?

MR. SIGUA: When you say "alternative 9 routing, there is no--the only alternative routing 10 that we have, so to speak, is the built-in 11 | redundancy on our trunking. If those trunking 12∥fails, we have no other alternative routing like 13 | Verizon, so the safety parity does not exist on our 14 network.

MR. KEHOE: Let me rephrase my question. 16 Their codes, as I understand it, route--are used to 17 route traffic to a public service answering point 18 when Verizon's 911 tandem cannot handle the 19 traffic.

Do you know whether WorldCom presently has 21 those numbers?

> MR. SIGUA: At this time we do not. What

we do have is when we have negotiated with the $2 \| local entities, they have elected not to use$ ten-digit--back what we call ten-digit back door number. We explained to them we still need an avenue for this means due to answer minus engineer phone calls. Usually an operator would say please dial 911 for emergency. If that person says I have dialed 911 and I'm getting busy, please connect me to 911. So, operator platform was given ten-digit numbers, all right, that they can call the local PSAP. That's for the operator platform.

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But for our network, we have none. We will scramble, all right? Whether we do get an 14 | indication that we went critical both our second and primary routers down, we will verify the ten-digit number that we have given to the operator even if they try to make contact with the PSAP or even with Verizon, if those ten-digit numbers that we have identified is still viable, and therefore we could overflow for those numbers.

MR. KEHOE: I would like to ask Verizon, do you know how many public service answering point coordinators there are in the State of Virginia?

MR. GREEN: No, I don't.

MR. KEHOE: Do you have an approximate

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MR. GREEN: I guess about 20.

MR. KEHOE: Can you describe the process you go through to obtain the alternative routing numbers from the public service answering point coordinators.

MR. GREEN: Sure. Let me just begin by saying in the State of Virginia we don't use ten-digit routing numbers as a tertiary means of getting through to the PSAP. What we have in the State of Virginia is dual tandems and trunks going out to each one of the tandems. We have primary and secondary tandem. If both trunks at a minimum to the trunks go to tandem A and for some reason we can't get the calls through, it will then route over to tandem B. If tandem B fails for some reason, which is very, very unusual, the calls are then routed over through our Verizon tops switch which is our operator service switch. And it's

routed back through the tandems.

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If at that point the call still fails, the customer gets a recording it does not route to a ten-digit number in Virginia.

Have you agreed to make the MR. KEHOE: same sort of routing to WorldCom?

MR. GREEN: We do provide them access to the two tandems we have in each one of the areas in which we operate in Virginia. We do not allow 10 access to our top switch unless they subscribe to our operator services product.

MR. KEHOE: Could you explain the 13 operation of the top switch again.

MR. GREEN: It's the tertiary means of the routing the call in case the other two tandems fail. It's a passthrough. It's called "tops passthrough." That brings the call over to the router back to the tandems.

MR. KEHOE: Does WorldCom have a 20 capability equivalent to that in Virginia?

MR. SIGUA: My background, I have as switch manager for New York Telephone.